WHAT IS CLAIMED IS:

1. A method for embedding secret information in a color image signal, comprising the steps of:

embedding said secret information in a prescribed position in a first signal component of said color image signal; and

embedding position information, which specifies the position where the secret information is embedded, in a second signal component of said color image signal.

2. A method for embedding secret information in a color image signal, comprising the steps of:

embedding said secret information in a prescribed position in a luminance signal of said color image signal; and

embedding position information, which specifies the position where the secret information is embedded, in a color difference signal of said color image signal.

3. A method for extracting secret information from a color image signal in which said secret information is embedded by an information embedding method according to Claim 1, comprising the steps of:

extracting said position information from said second signal component of said color image signal; and

on the basis of the position information extracted,

extracting said secret information from said first signal component of said color image signal.

4. A method for extracting secret information from a color image signal in which said secret information is embedded by an information embedding method according to Claim 2, comprising the steps of:

extracting said position information from said color difference signal of said color image signal; and

on the basis of the position information extracted, extracting said secret information from said luminance signal of said color image signal.

5. A method for embedding secret information in an input signal, comprising the steps of:

embedding said secret information in a prescribed position in said input signal; and

embedding position information, which specifies the position where said secret information is embedded, in another position in said input signal.

6. A method for extracting secret information from an input signal in which said secret information is embedded by an information embedding method according to Claim 5, comprising the steps of:

extracting said position information from said input signal; and

on the basis of the position information extracted, extracting said secret information from said input signal.

7. A method for embedding secret information in a prescribed position in an image signal, wherein the position where said secret information is to be embedded is varied frame by frame.

8. A method for extracting secret information from an image signal in which said secret information is embedded by an information embedding method according to Claim 7, wherein:

when said secret information is extracted from said image signal, the position from which said secret information is extracted is varied frame by frame.

9. A method for embedding secret information in an input signal, wherein said secret information is embedded by at least two kinds of methods.

10. A method for extracting secret information from an input signal in which said secret information is embedded by an information embedding method according to Claim 9, comprising the steps of:

extracting said secret information from said input signal by at least two kinds of methods; and

comparing at least two pieces of secret information so extracted with each other, and changing the processing for said secret information according to the result of the comparison.

11. An apparatus for embedding secret information in a color image signal, comprising:

first information embedding means for embedding said secret information in a prescribed position in a first signal component of said color image signal; and

second information embedding means for embedding position information, which specifies the position where the secret information is embedded, in a second signal component of said color image signal.

12. An apparatus for extracting secret information from a color image signal in which said secret information is embedded by an information embedding apparatus according to Claim 11, comprising:

first information extracting means for extracting said position information from said second signal component of said color image signal; and

second information extracting means for extracting said secret information from said first signal component of said color

image signal, on the basis of the position information provided by the first information extracting means.

13. An apparatus for embedding secret information in an input signal, comprising:

first information embedding means for embedding said secret information in a first position in said input signal; and

second information embedding means for embedding position information, which specifies the position where said secret information is embedded, in a second position in said input signal.

14. An apparatus for extracting secret information from an input signal in which said secret information is embedded by an information embedding apparatus according to Claim 13, comprising:

first information extracting means for extracting said position information showing said first position, from said input signal; and

second information extracting means for extracting said secret information from said input signal, on the basis of the position information provided by the first information extracting means.

15. An apparatus for embedding secret information in an

input signal, comprising a plurality of information embedding means for embedding said secret information by different methods.

16. An apparatus for extracting secret information from an input signal in which said secret information is embedded by an information embedding apparatus according to Claim 15, comprising:

a plurality of information extracting means for extracting, from said input signal, plural pieces of secret information which have been embedded by the respective methods; and

information decision means for comparing the contents of the plural pieces of secret information respectively extracted by said plural information extracting means, and changing processing for said input signal according to the result of the comparison.

17. A method for embedding secret information in an image signal transmitted with information showing the shape of an object, comprising the step of:

embedding said secret information in a prescribed position in the object, which position is specified by said information showing the shape of the object.

18. A method for extracting secret information from an

image signal in which said secret information is embedded by an information embedding method according to Claim 17, comprising the steps of:

extracting position information for specifying the position where said secret information is embedded, from said information showing the shape of the object; and

on the basis of the extracted position information, extracting the embedded secret information from the prescribed position in the object.

19. A method for embedding secret information in an image signal transmitted with information showing the shape of an object, comprising the step of:

embedding said secret information in a prescribed direction with respect to the shape of the object specified by the information showing the shape of the object.

20. A method for extracting secret information from an image signal in which said secret information is embedded by an information embedding method according to Claim 19, comprising the steps of:

extracting direction information, which specifies the direction along which said secret information is embedded in the object, from said information showing the shape of the object; and

extracting the secret information from the object, on the basis of the extracted direction information.

21. A method for embedding secret information in an image signal transmitted with information showing the shape of an object, comprising the step of:

embedding said secret information after changing the amount of secret information to be embedded in said image signal according to the size of the object specified by said information showing the shape of the object, and changing the method of embedding the secret information according to the amount of secret information to be embedded.

22. A method for embedding secret information according to Claim 21, wherein the method for embedding secret information is changed by changing the cycle of pseudo random numbers when said secret information is embedded.

23. A method for extracting secret information from an image signal in which said secret information is embedded by an information embedding method according to Claim 21, comprising the steps of:

extracting amount information, which shows the amount of the secret information embedded, from said information showing the shape of the object; and

extracting said secret information after deciding the amount of the secret information embedded in the object and the embedding method employed, according to the amount information.

24. A method for embedding secret information in an image signal transmitted with information showing the shape of an object, comprising the steps of:

extracting size information showing the size of the object from said information showing the shape of the object;

forming a secret information write region, which corresponds to a shape obtained by reducing or enlarging the size of the object to a prescribed size, according to the size information;

writing said secret information in this region; and

embedding said secret information in said image signal after restoring the secret information write region to its original size.

25. A method for extracting secret information from an image signal in which said secret information is embedded by an information embedding method according to Claim 24, comprising the steps of:

detecting the size of the object in which said secret information is embedded, from said information showing the shape of the object; and

extracting said secret information from the object, after enlarging or reducing the detected object size to the size when the secret information is written.

26. An apparatus for embedding secret information in an image signal transmitted with information showing the shape of an object, comprising:

embedding position deciding means for deciding a position in the object where said secret information is to be embedded, with reference to said information showing the shape of the object; and

composition means for embedding said secret information in the position decided by the position deciding means.

27. An apparatus for extracting secret information from an image signal in which said secret information is embedded by an information embedding apparatus according to Claim 26, comprising:

embedding position deciding means for detecting a position in the object where said secret information is embedded, with reference to said information showing the shape of the object; and

extraction means for extracting said secret information from the position decided by the embedding position deciding means.

28. An apparatus for embedding secret information in an image signal transmitted with information showing the shape of an object, comprising:

embedding direction deciding means for deciding a direction along which said secret information is to be embedded in the object, with reference to said information showing the shape of the object; and

composition means for embedding said secret information along the direction decided by the direction deciding means.

29. An apparatus for extracting secret information from an image signal in which said secret information is embedded by an information embedding apparatus according to Claim 28, comprising:

embedding direction deciding means for deciding a direction along which said secret information has been embedded in the object, with reference to said information showing the shape of the object; and

extraction means for extracting said secret information from the object along the direction decided by the direction deciding means.

30. An apparatus for embedding secret information in an image signal transmitted with information showing the shape of an

object, comprising:

object size detecting means for detecting the size of the object from said information showing the shape of the object;

embedding amount deciding means for deciding an amount of secret information to be embedded in the object according to the result of the detection, and deciding a method for embedding secret information according to the decided amount of secret information; and

composition means for embedding said secret information in the object, by the amount decided in the amount deciding means, according to the decided method.

31. An apparatus for embedding secret information according to Claim 30, wherein the method for embedding secret information is changed by changing the cycle of pseudo random numbers when said secret information is embedded.

32. An apparatus for extracting secret information from an image signal in which said secret information is embedded by an information embedding apparatus according to Claim 30, comprising:

object size detecting means for detecting the size of the object from said information showing the shape of the object;

embedding amount deciding means for deciding the amount of secret information embedded in the object, with reference to

the result of the detection by the object size detecting means; and

extraction means for extracting secret information from the object, by the amount decided in the embedding amount deciding means.

33. An apparatus for embedding secret information in an image signal transmitted with information showing the shape of an object, comprising:

object size detecting means for detecting the size of the object from said information showing the size of the object;

first secret information transforming means for forming a secret information write region, which corresponds to a shape obtained by reducing or enlarging the size of the object to a prescribed size, with reference to the result of the detection by the object size detecting means;

second secret information transforming means for expanding or compressing the secret information write region, thereby to restore the region to its size before the reduction or enlargement; and

composition means for embedding the secret information, which is converted by the second secret information converting means, in the object.

34. An apparatus for extracting secret information from an

image signal in which said secret information is embedded by an information embedding apparatus according to Claim 33, comprising:

object size detecting means for detecting the size of the object, from said information showing the shape of the object;

object transforming means for enlarging or reducing the size of the object to a prescribed size, with reference to the result of the detection by the object size detecting means; and

extraction means for extracting the secret information from the object transformed by the object transforming means.

35. A computer-readable medium in which a program for executing an information embedding method according to any of Claims 1, 2, 5, 7, 9, 17, 19, 21, 22, and 24 is recorded.

36. A computer-readable medium in which a program for executing an information extracting method according to any of Claims 3, 4, 6, 8, 10, 18, 20, 23, and 25 is recorded.